

THE URBAN INSTITUTE

MEMORANDUM

February 7, 1995

To: **Fred Van Antwerp, USAID/Prague**

From: **Tom Kingsley**

Subject: **CONCEPT PAPER: FIRST FY1995 SEMINAR-
CAPITAL PLANNING FOR MUNICIPAL HEATING SYSTEMS**

Copies: **Francis Conway, Michael Schaeffer, Petr Tajcman, Jaroslav Marousek, Suzanne Campbell**

For some time, we have planned that one of our seminars for this year would offer guidance on capital planning for municipal heating systems (identified in our program strategy and subsequently authorized under RFS 113). This paper provides background information on the topic and offers ideas as to how the seminar would be conducted.

Background and Purpose

As a result of misguided subsidy policies, soft coal was the fuel of choice for most Czech district heating systems in the Communist era. It is now well recognized that this choice implied extraordinary levels of air pollution as well as energy inefficiency. Furthermore, enormous energy losses still occur in distribution systems and in final use. Inadequate insulation (in distribution lines and **buildings**), coupled with poor maintenance and operating practices and negligible incentives for conservation, all perpetuate both higher cost and lower service than is typical of conventional Western heating systems.

Prior surveys of project interests have indicated that addressing the problems of their heating Systems is now a very high priority for Czech municipalities. The idea of converting to natural gas has almost become a fad. However, analyses have shown that choosing a strategy for improving the system of any given city is not that straightforward. The "right answer" may be different in different municipalities depending on, among other things, the nature of their current system and the comparative urgency of pollution control (e.g., more important in Northern Bohemia than in many other locations).

USAID has supported thorough studies of these issues (including detailed surveys of all system components) in several Czech cities. But the results have not yet been synthesized in a form that is easy for municipal mayors to understand, or widely disseminated. A number of municipal officials told us in 1994 that they remained confused about how to approach developing an investment and operating plant address the problems of their heating systems. USA's energy office is setting up an information center on this topic in northern Moravia, but has welcomed the support of our program in providing seminars to help set municipal officials on appropriate courses of action.

The topic should be an important one, given key USAID objectives. It gives highest priority to overcoming a major environmental problem, but does so in a manner that strengthens the capacities of municipal governments to plan realistic and fiscally responsible investment programs.

The seminars will not encourage municipalities to conduct studies just like those USAID has sponsored in the past. Those took several years to complete and mayors need to establish some course of action more rapidly than that. Rather, we will attempt to show the participants: (1) all of the steps that should be involved in analyzing and planning for their heating systems; (2) how to approach the difficult tradeoff decisions involved in a financial planning framework; (3) how to do a quick assessment of their situation with readily available data and then use that as a basis for deciding what course of action to take (some may be able to make important investment decisions now based on data in hand, others may be able to make such decisions after modest additional data collection, and yet others may need to wait to complete more ambitious surveys); (4) how to access help from consultants and other experts in developing their plans.

Proposed Approach

We propose holding four seminars on this topic in different regions. The first two will be held on March 30 (in Plzen), March 31 (in Brno). After some review of these experiences (and modifications as appropriate) the second two would be held in mid- to late-April: probably in one City in the Northern Bohemia high air-pollution region (like Most) and the other in Northern Moravia (probably Ostrava).

We will seek attendance primarily by mayors and deputy mayors responsible for investment planning Petr Tajcman is contacting - Mr. Stomach from the Training Foundation to ask their help in handling invitations and providing the space as they did before. He will also contact Mr. Gecko at the Union of Towns and Cities to establish positive involvement by them (they have a Committee on Energy that should certainly be invited and be explicitly recognized).

We are fortunate in securing the services of Jaroslav Marousek, President of Seven, to develop and, with his staff, present these seminars. Seven is the local firm that has worked in support of USAID supported heat system analyses from the start and, most important, prepared the best synthesis document I have seen on the subject: the

Business Plan for the proposed upgrade of the heating system in Plzen. We suggest that the Plzen work serve as a case study to illustrate the principles being applied.

Agenda

0900-0930: Introduction: the USAID program, the "new approach" to infrastructure planning and relation to MUFFS (abridged materials from our June 1994 series, presented by Kingly at the first two seminars and by Tajcman at the last two).

0930-1015: Principles of efficient investment planning for district heating systems (How to conduct a quick assessment and decide how to collect more data when needed; How to formulate alternative strategy scenarios; How to compare and weigh alternatives using economic, financial, and technical analysis; How to get expert help in energy planning). Presented by seven.

1015~1030: Break

1030-1130: The Plzen Case Study. Presented by SEVEN.

1130-1230: First question period. Presented by SEVEN.

1230-1330: Lunch

1330-1500: Second question period. Presented by SEVEN.

Note: Time will be left for questions after the presentations within each session. As to the "question periods", we think this is the best way to organize for more interactive sessions within these seminars. The invitation would ask mayors/deputy mayors to prepare questions on their own heating system problems (with as much data about them as they can easily assemble) and the SEVEN staff would respond in group sessions. This is not the type of subject where it would be appropriate to develop "sample problems" for them to work on in small groups--questions about their real problems should be more interesting for everybody.

Draft for Invitation

A USAID SUPPORTED SEMINAR ON IMPROVING THE EFFICIENCY OF DISTRICT HEATING SYSTEMS: AN ASSESSMENT PLANNING FRAMEWORK

For many municipalities, district heating systems represent both a major problem and a major opportunity. Most of the systems they inherited waste a great deal of energy and create unacceptable levels of pollution--the costs of operating these systems as they

stand imply a sizable drain on municipal budgets. Systems upgrading and/or replacement could offer substantial financial savings over the long term as well as make a major contribution to environmental improvement.

Yet the type of improvement program that will yield the highest benefit is not readily apparent on the surface. For example, conversion to natural gas may be sensible in some places, but recent analysis has shown it does not make good sense economically in others.

This seminar has been designed to help Czech Mayors (and Deputy Mayors responsible for district heating investments) decide how best to improve their systems over the long term. It will be presented by SEVEN, a firm which has played a central role in analyzing the cost-effectiveness of options for heating systems in a number of cities. It will illustrate the types of analyses that need to be undertaken, and the way alternatives can be compared, in simple and clear terms. Methods of financing heating system improvements will also be discussed. as will methods of promoting energy conservation.

Four full-day seminars will be held (0900-1500): (GIVE PLACES AND DATES HERE).

A part of the day will be devoted to discussing, and offering advice, on the real system problems of the municipalities that attend. Please bring information about your systems (descriptive characteristics) and their problems to the seminar as a basis for these discussions.

The cost of participation will be Kc _____ payable to would like to attend, please write or telephone

at
If you

Memorandum

To: Francis Conway, Urban Institute
Fred Van An Antwerp, USAID

From: Bruce J. Purdy

Subject: Concept Paper for Water and Wastewater Systems Management and Development Seminar

Date: 10 March, 1995

Introduction

At the request of the USA ID, the Urban Institute was asked to prepare a concept paper which would provide guidance toward the development of a series of seminars an water and wastewater management and development for the Czech Republic. This paper provides background information and the development of

a strategy for planning and conducting these seminars. It also offers some thoughts on the design of a typical day-long seminar and a draft letter of invitation for distribution to prospective invitees.

Background

The Czech Republic is in the midst of a social, political and economic transformation that is altering virtually every aspect of life in the country. Central to this change is the changing nature of local government and its function as a provider of services to its constituents. Nowhere is this change more noticeable than in the way that government manages its water and wastewater infrastructure. Transferring ownership of this infrastructure from one central authority to local municipal control has had a profound effect on the way that fundamental services are operated and maintained.

Survey after survey and scores of interviews with municipal officials throughout the Czech Republic have shown that water and wastewater issues continue to be a priority concern for mayors. Many systems are poorly maintained and inefficient. Under the Communist regime, Systems were often overbuilt with little attention paid to on-going maintenance once the facilities were operational. The result of this neglect is that equipment is currently in less than optimal condition and there is a significant backlog of investment needs required.

Addressing the problem of operating, maintaining and financing new and existing systems remains a huge problem for the Czech Republic. Developing a strategy to rectify years of neglect, to rehabilitate existing Systems and to build new and improved systems requires a significant amount of forethought. Furthermore, solutions may be quite different for any given city. Each situation is unique. Size of the municipality, characteristics and conditions of the local infrastructure existing institutional structures, sense of urgency on the part of the community and, of course, financial "well being" all contribute to the strategic thinking each municipality needs to undertake to cope with its own situation.

Mayors and deputy mayors alike are seeking outside input into the issue of how they operate, maintain and finance water and wastewater infrastructure. This is apparent in any number of visits made by Urban Institute staff throughout the country as mayors, almost

without exception seek guidance on tactics and strategies they should employ to deal with these facilities. With a real absence of models of how facilities should be managed and no ready point of reference from which to draw information as to their role in facilities management, USAID has seen the need to provide support for developing seminars to guide municipal officials in establishing an appropriate course of action.

Objectives

Water supply and wastewater management and development is of critical importance to local officials. Conducting a seminar for a municipal audience on this topic makes eminent sense and meets USAID's objectives in a number of ways. First, it strengthens the *capacities* of local governments to manage their own affairs, to plan realistically and to develop a financially feasible program of current and planned

municipal investments. Second, it provides a real opportunity for mayors to learn new ways to manage their newly-inherited infrastructure and strengthens their overall understanding of business concepts that will guide them in the next several years. Third, it is "environmental" in nature. It deals with the issue of maintaining safe drinking water supplies for the citizenry and decreasing high pollutant levels through significant investment in the operation and maintenance of water pollution control technology. Fourth., it affords USAID) the opportunity to encourage **citizen** participation in **community-based** infrastructure management.

Seminar Design

The seminars will be designed to answer the question: As Mayor (or Deputy Mayor), what do I really need to know to manage my water and sewer systems? The seminars will be practical enough to provide concrete advise to participants that are dealing daily with the ups and downs of operating and maintaining water and sewer operations.

The seminars will deal with four (4) specific issues; subsequently the format will be divided into four (4) separate modules.

1. The first module will focus on technical issues. What is it that I as a Mayor need to know about the technical operations of my water and wastewater infrastructure? On a day to day basis, what do I need to know about these systems so that I can talk intelligently to technical staff and ultimately make informed decisions about the future of these systems? (Example: Discuss differences in primary and secondary treatment of water pollution technology and various methods of disinfection in water supply)
2. The second module will focus on financial issues. What is it that I need to know to prepare a financial feasibility study? Once this is done, how can I finance the necessary improvements, and can we afford it? What financial alternatives are available to me, how do I access them.. and what does it mean to the financial viability of my city should we decide to go ahead with one or more of these financial options? Example: Define and present a **feasibility** study. Present various financial options available to Mayors, including commercial **loans**, MUFFS, etc.)
3. The third module will focus on institutional issues. What are the various institutional issues that I need to think about when it comes to managing my facilities? What is my role, for example, versus the joint stock company? What is best provided by the private **sector**? What is my responsibility vs. the private sector and how do we communicate effectively to get our respective jobs done? (Example:

discuss various organizational prototypes and present advantages **and** disadvantages of each organizational arrangement)

4. The last module will focus on managerial effectiveness. How do I know when I've been effective as a manager? What kinds of measures exist which I can use to evaluate my performance? How do my constituents know that I'm doing the job I set out to do and how can I, personally, measure the changes that I know I will need to make? (Example: Discuss various methods and case studies of public participation and sampling constituent attitudes)

We cannot stress enough the need for the seminar content to be practical and "hands-on" in nature. There are a number of excellent case studies of Czech municipalities which illustrate a variety of alternative technical, financial and institutional options to manage their systems. These case histories can be developed into excellent teaching tools. An over-reliance on international case histories, except in a few instances, would not be warranted. Cases need to be developed primarily from local conditions.

Proposed Approach

We propose holding six (6) seminars nationwide on the topic of water and wastewater management and development. We have yet to choose specific locations though we would anticipate that the seminar sites would be evenly distributed throughout the country. Choice of locations would essentially be mandated by our ability to utilize the Training Foundation's facilities.

We are looking **at** a May time frame in which to hold these seminars. We expect to rely on the services of Urban Research (Petr Tajcman) and the Training Foundation to handle logistics. We have prepared a draft invitation letter (see attached) which can be sent to invitees for your review and comment.

We believe, as we have stated throughout this document, that the primary audience for this seminar are mayors and deputy mayors. The audience, we suspect, would come mostly from large urban areas, though there may be instances where representatives of smaller communities

(representatives of joint stock companies or managers of regional **water** authorities) may attend. We have not targeted the technical engineering community but rather those individuals charged with managing local infrastructure. We propose to provide them with the fundamental skills necessary to make better decisions about systems which they have most likely had very little experience with in the past.

I will be involved in organizing and developing the technical content for the seminars. Each module will be carefully designed so that the content is clear, concise and "to the point." All overheads and flip charts will be prepared well in advance to ensure consistency and uniformity. I assume that I will facilitate the seminars using Petr Tajcman's assistance. I will rely on Urban Research and the Training Foundation to assist with the logistics.

I believe that we need to enlist the services of Water Resources Development and Construction (WRDC) an environmental engineering consulting firm based in Prague for technical and financial input. I have personally met with three of the Directors and had lengthy discussions with each of them. They are informed and articulate representatives of the engineering community. They clearly understand what mayors of both large urban centers as well as small rural villages are facing when it comes to water supply and

wastewater issues. Their input into the development of technical and financial alternatives would be invaluable.

Seminar Agenda

The seminar agenda is designed as a lecture format followed by a question and answer period. There are no small group exercises planned. **Full** group participation for this kind of broad overview material is essential.

There are four (4) separate modules each presenting a different topic. Times for each module are added to roughly one hour and fifteen minutes, including both the lecture and **question** and answer period. More time is allotted to financial issues because these appear to be most critical. In the invitation letter to invitees we should ask them to bring pertinent questions regarding their water and wastewater systems to the seminar so that we can respond to them as necessary. This should make the experience more interactive for them.

I would anticipate that for each lecture we will use flip charts and overheads to present OUT materials. We will notify participants that all the materials we present will be reproduced at the end of the seminar and sent to them for their use. This cuts down significantly on note taking and focuses participant's attention on the lecturer. A sample agenda **follows:**

AGENDA

0900-0915 AM

Welcome and Introduction

Purdy/Tajcman

0915 -0930 AM

The Water and Wastewater Seminar:
Schedule of Day's Activities and
Goals and Objectives We Wish to
Accomplish

Purdy

0930- 1000 AM

Module 1: Technical Fundamentals of
Water Supply and Wastewater
Management How Do These Systems
Operate and Why Do I Need to Know
This? A Look at Technical Alternatives.

Purdy/WARD

1015- 1030AM
1030- 1115AM

Break

11.15- 1145AM.

Question and Answer Period on Module .

Module 2: Financial Alternatives Available
to Me as A Municipal Official: What Are
Available and How Do I Access Them?
Can We *Afford* it?

Purdy/Tajcman

Tajcman/WARD

1145 AM - I 230 PM Question and Answer Period on Module 2

1230-1330 PM Lunch

Purdy/WARD

1330- 1400 PM

1400-1430 PM

Continued Q&A on Module 2

Module 3: Institutional Alternatives What is
My Role vis a vis Joint Stock Company and
Others Within the Private Sector When It

4

Purdy

BOSTON

TO

P.06

Comes to Managing My Infrastructure?
What at Alternatives Exist for Me?

1430 1500 PM

1500- 1.545 PM

Question and Answer Period on Module 3

Module 4; How Do I Know That I'm Doing
a Good Job as Mayor in Managing This 'Infrastructure? What Tools are Available to Me arid How' *Can J*
Use Them? (Include Q&A in *This* Time Slot)

Purdy

Purdy

1545- 1600PM

Summary and Closing Remarks: What Have

Purdy/Tajcman

**We I-earned Today and What Information
Can I Take Home With Me So That I Can
be More Effective?**